NOvA Contingency Use Plan (updated version for May 2012 IPR)

(Sorted by expected decision date, Project Manager's estimate)

Priority	Item Type	Item Description	Current Cost Estimate (K$) (does not include contingency)	Current Decision Date Estimate	Comments (blue comments are new for this IPR)
	Detector	**Build a new Near Detector with identical thick plastic as Far Detector**	**1,000**	**already decided before last IPR in August 2011, cost still being assessed**	Size & cost depends on size of cavern on next line. **Size now known to be 3 x 3 modules. Basic parts exist as rejects from Ash River module failures.** Some additional assembly costs ~ 300 K$, 1/4 of Far blocks, but 6 of them (**Now perhaps only 5-6 blocks since more mass)**
	Detector	**Design to increase transverse size of Near Detector Cavern**	**300**	**Not needed, 1/1/2012**	
	Detector	**RFP for larger Near Detector Cavern once design in hand**	**500**	**rejected, 1/1/2012**	**not needed**
	Detector	**Add 2nd Near Cavern to RFP as an option**	**-**	**Done, 12/1/2011**	would be a duplicate of 1st cavern
	Detector	**Recover Far Detector 30th block (then close to 15 kt)**	**5,000**	**1-Aug-12**	**All $ for 30th block now removed from schedule. Price is calculated from MIE Detector total / 29 blocks. Decision Date stems from need to buy Kururay fiber in Summer 2012. Early decisison date implies the most likely decision is to reject this item. Fiber cost for 1 block is about 500K$, so don't have to bite it all off, but if we buy the fiber and don't build the block...**
	Detector	**Add additional 6" of Barite shielding over Far Detector**	**500**	**1-Aug-12**	Need input from a fully instrumented protoype Near Detector. **Will get this data from new APDs running on the prototype Near Detector this summer.**
	Detector	**Exercise Option for 2nd Near Cavern**	**3,500**	**1-Oct-12**	Cheaper than the 1st cavern, no mobilization overheads, cost dominated by excavation. **This price is unchanged but is now the sum of the excavation and outfitting bid from the selected Cavern contractor.**
	Detector	**Build a 2nd Near Detector for short baseline oscillations**	**500**	**1-Oct-12**	**Proponents opt for cheapest option: to re-use the prototype Near Detector, then only installation costs.**
	Detector	**Build SciNOvA front end for Near Detector**	**150 - 2500**	**1-Oct-12**	**Proponents will pursue NSF funding in early Fall 2012 except for installation costs (estimated at 150 K$)**
	Detector	**Build a testbeam module of the NOvA detector**	**500**	**1-Apr-13**	**Proponents are doing simulations on the required size. 1x 1 module or 2 x 2? Probably only 3 or 4 blocks long. Basic parts exist as rejects from Ash River module failures. Assembly must follow assembly of KPP Near Detector, therefore decide when Near Detector is done.**
	Detector	**Build additional Far Detector mass, up to 3 additional kt (10,000 K$ per kt)**	**10,000**	**rejected, 4/1/2012**	**I can't imagine doing any more than recovering the 30th block**

NOvA Contingency Use Plan (updated version for August 2011 IPR)

(Sorted by expected decision date, Project Manager's estimate)

Priority	Item Type	Item Description	Estimate (K$) (does not include	Current Decision Date Estimate	comments
	Detector	Build a new Near Detector with identical thick plastic as Far Detector	1,000	already decided, cost not well known	Size & cost depends on size of cavern on next line. Basic parts exist as rejects from Ash River module failures? Some additional assembly costs ~ 300 K$, 1/4 of Far blocks, but 6 of them
	Detector	Design to increase transverse size of Near Detector Cavern	300	ASAP	waiting for simulation
	Detector	RFP for larger Near Detector Cavern once design in hand	500	1-Dec-11	18 weeks to complete new design
	Detector	Add 2nd Near Cavern to RFP as an option	-	1-Dec-11	would be a duplicate of 1st cavern
	Detector	Exercise Option for 2nd Near Cavern	3,500	1-Aug-12	Cheaper than the 1st cavern, no mobilization overheads, cost dominated by excavation.
	Detector	Build a 2nd Near Detector for short baseline oscillations	500	1-Aug-12	cheapest option is to re-use the prototype Near Detector, then only installation costs
	Detector	Build SciNOvA front end for Near Detector	3,000	1-Aug-12	
	Detector	build a testbeam module of the NOvA detector	500	1-Aug-12	Basic parts exist as rejects from Ash River module failure?
	Detector	Recover Far Detector 30th block (then close to 15 kt)	1,100	1-Aug-12	900 K$ PVC, 200K$ module assembly, rest of parts are still in schedule / under contract
	Detector	Add additional 6" of Barite shielding over Far Detector	500	1-Aug-12	Need input from a fully instrumented protoype Near Detector
	Detector	Build additional Far Detector mass, up to 3 additional kt (7,300 K$ per kt)	7,300	1-Aug-12	Would need additional fiber, scintillator, PVC, modules, electronics, & assembly
		Total:	**18,200**		

NOvA Contingency Use Plan (this version from August 2010 IPR)

(sorted by Project Manager Priority as of August 2010)

Priority	Item Type	Item Description	Current Cost Estimate (K$)	Current Decision Date Estimate	Status in August 2011
0	Detector	Full mock up of Near Detector in the new	258	11-Jan-2010	done
0	Accelerator	Build more Recycler Quads	100	2-Jun-2010	done
0	Accelerator	Larger water chiller for NuMI	50	15-Jul-2010	done
1	Detector	Pay to store mixed scintillator, buffer in	400	1-Oct-2010	done
1	Detector	**Build additional Near Detector**	3,060	1-Oct-2010	will build
1	Detector	**Build an additional FHEP block**	1,780	1-Oct-2010	decided NOT to do this
2	Accelerator	Recommission Fermilab long beam tube	150	ASAP	abandoned
2	Detector	Design access around Pivoter at Ash River using commercially available powered	1,500	1-Aug-2010	done
3	Detector	Build additional Far Detector mass, up to 4 additional kt	38,000	01-Dec-2010 for waveshifters	purchased waveshifters, delivered in May 2011
				01-July-2011 for other parts	dates have slipped, evaluating
3	Accelerator	Solid state upgrade to the Booster RF system	6,000	1-Jan-2011	now part of Fermilab's Proton Improvement Plan
4	Detector	Enlarge Near Detector cavern by a factor of about 2 and instrument 2nd Near Detector	3,275	1-Jan-2011	Plans are now more complicated, wider 1st Near, 2nd Near also considered
4	Accelerator	RFQ as first section of Linac	700	1-Oct-2010	now part of Fermilab's Proton Improvement Plan
5	Detector	Add additional Barite shielding over Far	500	1-Mar-2011	still active
5	Accelerator	Add a 20th Booster RF cavity	800	?	now part of Fermilab's Proton Improvement Plan
10	Accelerator	Increase Main Injector cooling ponds	8,000	1-Mar-2011	under study by Laboratory
		Total:	**64,573**		